

ABSTRACT OF THE DISCLOSURE

5 A refresh zone detection part divides a block of a semiconductor memory into refresh zone units for executing refresh, and detects the refresh zone including the sector of the writing target. A refresh execution part sequentially refreshes the sectors included in the refresh zone detected by refresh zone detection part, every time data is written to a sector. Thus, it is possible to prevent the number of rewritings to a specific sector from increasing, and the refresh can prevent data change due to accumulative disturbance.